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ABSTRACT

This paper reviews selected research of the past decade concerning the optimal size of elementary and secondary schools in the United States. By quoting from primary sources, it seeks to present the character, substance, and trend of the school size debate; to identify principal researchers and findings; and to serve as a resource document. Small schools (fewer than 500 students) comprise 62% of U.S. schools and enroll 34% of U.S. students. However, school size is difficult to discuss without considering at least two other dimensions of the education system--class size and school district size. Small class size has become almost synonymous with excellence in education. However, policies that limit class size can result in increases in school size. Consolidation of school districts can also result in larger schools. Recent research indicates that: (1) small schools can be highly effective in providing quality education; (2) large schools may not provide the economies of scale nor the quality of education claimed to justify their largeness; (3) school size tends to be dependent on the influences of class size and district size; (4) school district size is the most significant factor in determining school size; and (5) school size is of particular concern in rural areas, where small schools are prevalent and where proposals for consolidation should be weighed in the context of research findings on the relative effectiveness of small versus large schools. This report contains 30 references. (SV)

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THE DIMENSIONS OF EDUCATION: RECENT RESEARCH ON SCHOOL SIZE

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Working Paper
Series

THE DIMENSIONS OF EDUCATION: RECENT RESEARCH ON SCHOOL SIZE

by

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THE
STROM THURMOND
INSTITUTE

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EXECUTIVE SUMMARY

Although the question of optimal school size has never attained the magnitude or intensity of other national debates on public education, educators do not agree on what constitutes the appropriate size for K-12 public schools. Those who extol the virtues of large schools emphasize the advantages of economy of scale, broad curriculum, expanded extracurricular activities, and faculty/staff depth. Those who call for smaller schools declare that quality education and academic achievement are attained most effectively in schools of modest size that have strong ties to the community and parents. Research indicates that the effective size for an elementary school is in the range of 300-400 students and that 400-800 students is appropriate for a secondary school. Research also indicates that larger schools with enrollments in excess of 1,200 have not produced expected economies of scale and that sufficient numbers of students do not enroll in enhanced curricular offerings to justify availability.

School size, however, is but one dimension of the education system, and it is difficult to discuss without considering at least two other dimensions—class size and school district size. At one end of the spectrum, small class size has become almost synonymous with excellence in education and it is generally accepted that students learn best in small classes. However, policies that limit class size, though commendable, can result in increases in school size. At the other end of the spectrum is the question of school district size. America has been consolidating its school districts for most of the current century, and as the process continues, smaller school districts are consolidated or merged with larger school districts usually resulting in larger schools. If limits on class size are set, and if public policy mandates the consolidation of school districts, then school size decisions become a result of factors other than the academic merits of relative size.

The implications of the school size debate take on special significance in rural America where some schools are too small to be educationally effective; and others, while educationally effective, may not be cost effective. Left with the choice of consolidation or of allocating additional funds to rural areas, it is not unusual for states to address the problem through district consolidation policies. One may argue that if small classes are the most educationally productive, should it not follow that small schools should be comparably productive. Conversely, if large school districts provide economies of scale and effective resource management, should not large schools be equally economical? Recent research indicates that (1) small schools can be highly effective in providing quality education, (2) large schools may not provide the economies of scale nor the quality of education claimed to justify their largeness, (3) school size tends to be a dependent variable in the educational equation, and as such, it becomes a result of the influence of independent variables such as class size and district size, (4) school district size is the most significant factor in determining school size with consolidation/reorganization plans generally resulting in larger schools, and (5) school size is of particular concern in rural areas where small schools are prevalent and where proposals for consolidation should be weighed in the context of research findings on the relative effectiveness of small versus large schools.

THE DIMENSIONS OF EDUCATION: RECENT RESEARCH ON SCHOOL SIZE

Introduction

Purpose

The purpose of this paper is to review recent research concerning the optimal size of elementary and secondary (K-12) public schools in the United States. Throughout this paper the term *school size* refers to the number of students enrolled in a school. Thus, school size and enrollment are synonymous for the purposes of the paper. The review focuses on research findings of the past decade that may be of value to educators, administrators, community leaders, and parents involved in decision making in which school size is a factor.

Thrust

As an institutional working paper the thrust is to report and quote from primary sources the research on school size that has been conducted during the past decade. The paper is selective not global. It is broadly categorized and generally chronological with a few exceptions. It does not seek to present final conclusions nor sweeping recommendations. It does seek to present the character, substance, and trend of the school size debate; to identify principal researchers and findings; and to serve as a resource document.

The Debate

The debate on optimal school size has never attained the magnitude or intensity of other national debates on public education. This does not diminish the fact, however, that educators and researchers do not agree on what constitutes the appropriate size for K-12 public schools. Those who extol the virtues of large schools emphasize the advantages of economy of scale, broad curriculum, expanded extracurricular activities, and faculty/staff depth. Those who call for smaller schools declare that quality education and academic achievement are attained most effectively in schools of modest size that have strong ties with the community and parents.

Recent Research

During the past decade, researchers have produced a considerable body of knowledge on optimal school size. In terms of quantity alone, the preponderance of literature favors the small school. There is no clear agreement on the dividing line between small and large schools. On average, the research indicates that an effective size for a small elementary school is in the range of 300-400 students and that 400-800 students is appropriate for a secondary school. Research also indicates that schools with

enrollments in excess of 1,200 students are in the large category. For purposes of discussion, the following working numbers are useful:

SIZE CLASSIFICATIONS	ENROLLMENT
Small Schools	less than 500
Medium Schools	500 to 1000
Large Schools	more than 1000

National enrollment statistics for public schools for the 1987-88 school year were (Snyder 1989, 99):

	Total Number of Schools (83,248)		Total Enrollment (39,914,335)	
School Size	Percent of Total	Cumulative Percent	Percent of Total	Cumulative Percent
less than 100	9.01	9.01	0.95	0.95
100-199	11.31	20.32	3.48	4.43
200-299	12.90	33.22	6.62	11.05
300-399	14.93	48.15	10.67	21.72
400-499	13.78	61.93	12.61	34.33
500-599	11.10	73.03	12.40	46.73
600-699	7.80	80.83	10.28	57.01
700-799	5.36	86.19	8.16	65.17
800-999	5.82	92.01	10.53	75.70
1000-1499	5.17	97.18	12.67	88.37
1500-1999	1.71	98.89	5.99	94.27
2000-2999	0.99	99.88	4.72	98.99
more than 3000	0.13	100.00*	0.91	100.00*

* Totals may not add to 100 due to rounding.

Average Enrollments: Elementary Schools 424
Secondary Schools 696
Combined Total 490

A comparison of the working numbers with the statistical data indicates that if small schools are defined as having less than 500 students, then approximately 62 percent of our schools could be classified as small. These small schools enroll about 34 percent of the students.

Multidimensional Context

School size is but one dimension of the education system, and it is difficult to discuss without considering at least two other dimensions—class size and school district size. Collectively, these three dimensions have overlapping relationships that are viewed from different perspectives and with different priorities by the players in the educational arena. There is general agreement that a school can be too small to be effective. There is reasonable agreement that a school can be too large to be

effective. In the vast middle ground, however, between *woefully* small and *dreadfully* large, there is room for much debate. It is not unusual for the public debate of an issue such as school district consolidation to be conducted without reference to the academic merits or demerits of significant changes in school size that are a frequent result of district consolidation and reorganization plans.

School Size

Throughout the 1980s a number of education researchers wrote extensively on the subject of school size. Most of them criticized an apparent trend toward larger schools. Some wrote on the relative advantages of small versus large schools. Others concentrated on the reasons for the trend toward larger schools.

Research Findings

In 1983, Coladarci, a former dean of Stanford University's Cubberley School of Education, observed:

> Approximately four score and twenty years of research on the effects of institution size on pupil progress produced only a literature of disagreement. . . . Revised and reinterpreted, this literature confesses a clear and near-unanimous finding: the smaller unit definitely is superior in pupil achievement. . . . Other than home, there is no place like the small school (pp. 79, 83).

In 1984, Goodlad, a frequently quoted researcher wrote:

> It is not impossible to have a good large school; it simply is more difficult. One might put forward economic reasons, but I am unaware of supporting data. What are the defensible reasons for operating an elementary school of more than a dozen teachers and 300 boys and girls? I can think of none. . . . The burden of proof, it appears to me, is on large size. I would not want to face the challenge of justifying a senior, let alone junior, high of more than 500 to 600 students (unless I were willing to place arguments for a strong football team ahead of arguments for a good school, which I am not) . . . . Although I have set top limits for school size at 800 students for the secondary phase and 400 for each of the lower two, my preference is for 600 and 300 respectively. And I believe that primary schools of only 150 boys and girls can be very satisfactory (pp. 309-310, 338).

In 1984, Daresh summarized the pros and cons of the school size debate as follows:

> There are those who . . . argue that large size is a desirable characteristic of schools. In this view, larger schools are good because they are able to provide more diverse instructional offerings to meet the different needs and interests of students. Courses that might not be feasible because they are too "exotic" and do not attract many students . . . can be offered in schools with large enrollments. Even more significant are the opportunities that exist in large schools for student participation in many

> different extracurricular and athletic activities.... Finally, the most frequent argument in favor of large schools is the fact that larger schools are more efficient to operate and are therefore more responsive to community financial interests. There is no question that, due to building maintenance and necessary support staff, it costs considerably more to operate two buildings with 500 students in each than a single large building with 1,000 students.
>
> Those who favor smaller schools note that, while it may be true that some instructional diversity might be sacrificed in smaller schools, instruction in the "basics" will not suffer.... with fewer distracting elective courses, schools can focus more attention on improving instruction in critical skill areas. Small school advocates also note, while the number of extracurricular activities might be increased in large schools, there is still no guarantee that a higher percentage of students will participate. Small schools still provide ample opportunities for students to become involved and receive recognition as "stars." Finally, the strongest argument generally made in favor of maintaining smaller schools is that they are much more personal places where students are less likely to feel lost in the crowd (pp. 3-4).

Probably the most prolific writer during the late 1980s on the subject of school size has been David Monk of Cornell University. Though much of his research has been based on New York state, his findings are consistent with those of other researchers of the decade.

In a 1986 study of how curricular offerings of large secondary schools compare with the offerings of small secondary schools, Monk explains:

> The study is motivated by theories of production which hold that economies are available in large compared to small schools. To say that such scale or size economies exist is to say that it is **possible** for larger schools to operate more efficiently than smaller schools. It is quite another matter to say that larger schools in fact take advantage of whatever scale economies are available to them (p. 1).
>
> ... an expanded, more specialized, more diversified curriculum is not guaranteed by large enrollment levels alone... it is possible to offer at the 400 pupil level a curriculum that compares quite favorably in terms of breadth and depth with curriculums in much larger settings (p. 25).

In a 1987 paper presented at an international conference, Monk emphasizes the findings reported above:

> Results indicate that the sources of scale economies are exhausted by the time enrollments reach relatively small levels and that beyond these modest levels, gains in curricular comprehensiveness are trivial (1987a, 137).
>
> It is clear that school size is related to the mix of courses as well as to how courses are offered. However, it is equally clear that there are limits on the degree to which schools

take advantage of the efficiencies larger enrollments are alleged to offer (p. 147).

> The message these data convey is that an expanded, more specialized, more diversified curriculum is not guaranteed by large enrollment levels alone. A second, and related message, is that it is possible to offer at the 400 pupil level a curriculum that compares quite favorably in terms of breadth and depth with curriculum offered in much larger settings. . . . There is less to be gained from enrollments in excess of 400 pupils than is commonly believed to be the case (p. 148).

The above findings from recent research are surprisingly consistent with research conducted many years earlier. For example, Grieder in 1947 reported that peak instructional economy in elementary schools was achieved at the 400 student level. McLure in 1953 found some economies in schools up to 300 students.

In a 1988 paper, Monk criticizes the traditional view on school size that "bigger is better." With respect to the problem of optimal school size, he describes three policy options:

1. A traditional approach which considers low levels of enrollment as contributing to inadequate program offerings.

2. A modified traditional approach similar to the traditional approach, but tolerant with local means of increasing enrollment even when it conflicts with the state's view of the ideal.

3. A nontraditional approach which differs substantially from the others by placing less emphasis on low enrollment as the primary source of problems in rural schools (pp. iii-v).

The author concludes that

> . . . each approach has advantages and disadvantages, (and) it is not a question of one approach or policy being right and the others wrong. Nor is it a matter of choosing one policy to the exclusion of all others. Rather, states typically have the opportunity to pursue a combination of policies. The challenge is to devise a desirable mix . . . (pp. 27-28)

In 1989 Cole provided an international overview on small schools:

> Small schools will not disappear in the foreseeable future. Around the world, rural populations served by small schools are substantial . . . distinctions between "small" and "rural" not only vary from country to country, but within each nation as well. Policies to support small schools must consider the way in which a given local or regional context can be used to support the needs of small schools while preserving and strengthening their advantages (p. 3).

Questions on Optimum Size

Defining the optimum school size raises many questions. Can small schools offer the range of courses that can be offered in large schools? Can they offer the range of activities—arts, dramatics, and especially great athletic teams—such as might be found in larger schools? Do large schools offer more opportunities? Are they more economical to operate? Are they limited by an inability to maintain close ties with the community? Do students learn better in small or large schools?

Who are the proponents for small size? Do they tend to be the citizens and parents in small towns and communities who prefer the tradition of small schools tied to the community and controlled locally? Who are the proponents for large schools? Do they tend to be the administrators at state and district level who seek centralized control, standardized curricula, and effective resource management?

The preponderance of professional literature in the past decade indicates that educational researchers support the concept of small school effectiveness. It appears, however, that the determinants of school size are seldom the result of research. For example, a small school is closed because there are not enough students to justify its operation; or an aging school is in such disrepair that it is more cost-effective to close it than to rehabilitate it, and the displaced students are relocated to other schools. Or two small rural school districts are not considered cost-effective and are consolidated into a single district, and class sizes double. More often, school size is the result of other factors—political, economic, social, demographic. Seldom are school size decisions made solely on the merits of size as an educational factor.

Implications for Small Rural Schools

The implications of the school size debate take on special significance in rural America. Some rural schools are too small to be educationally effective. Others, while educationally effective, may have operating expenses that are more than the local taxpayers can bear. The state may address the problem by providing special funding support to rural areas. Alternatively, the state may address the problem by encouraging the consolidation of small districts and schools. Either case provides fertile ground for the application, testing, and evaluation of the research findings on the effectiveness of small schools.

Class Size

Small Is Beautiful

While there is debate as to the educational effectiveness of small schools, there is little debate as to the effectiveness of small classes. Small class size has become almost synonymous with excellence in education. It is conventional wisdom that students learn best in small classes, though there is not universal agreement on this assertion. Daresh, for example, noted that some researchers have documented a positive relationship between smaller classes and increases in student achievement; and other researchers have concluded that class size was of little importance in determining student achievement (1984, 2). Recent research by McNamara and Deaton found that verbal skills can be

improved by decreasing the pupil-teacher ratio (1988, 8). Based on this finding, South Carolina community leaders were encouraged to hire additional English teachers when targeting the allocation of limited funds to priority goals (Strom Thurmond Institute 1990, 1).

National Statistics

National statistics on pupil-teacher ratios provide limited insight into the question of class size. For the school year 1987-88, the average pupils-per-teacher ratio for all school districts enrolling more than 20,000 students was reported as 20.3. The lowest ratio was 11.3 for the Syracuse (New York) City Schools, and the highest was 27.0 for the Montebello (California) Unified School District (Snyder 1989, 93-97). These figures, however, may not represent what will be found in classrooms. Not only are they averages, but districts and states vary with respect to the categories of educators that are grouped into the teacher classification.

Public Perceptions

Regardless of statistics and studies, the prevailing perception is that small classes are best. States may mandate the maximum size for classes. Accreditation agencies may prescribe the limits of size. Parents will demand small classes. Principals and superintendents will brag about their small classes. With few exceptions, teachers are committed totally to small classes. They know the impact of 13 versus 27 students in a classroom. In large classes discipline and control suffer, teachers are stressed, the administrative burden escalates, and expectations for student learning diminish.

Effects on School Size

Class size policy may have unexpected relationships to school size. If there are limits on class size in a given school, and there is a limit on physical space in the school plant; the school can expand only to the extent of the number of classes it can physically accommodate. When the saturation point is reached (preferably sooner) administrators must make decisions among options such as the following:

1. Add portable classrooms.
2. Enlarge the school plant.
3. Transfer students to another school.
4. Relocate school boundaries.
5. Build a new school.
6. Waive limits on class size.
7. Institute double sessions.
8. Consolidate with a larger school.

Each of these options has a potential for increasing the size of that school or of some other school or schools in the district. Thus, the perceptions and actualities of class size policy can have direct impacts on school size.

School District Size

This paper has reviewed the literature on school size and quoted some of the forceful arguments on the effectiveness of large schools and small schools. It has also reviewed the concept that small classes are better than large classes and noted that broad support for this concept is found throughout the education community. It now remains to examine the issue of school district size, for it is within the context of this issue that the most heated debates on school size occur. It is possible for class size to have an effect on school size. By comparison, however, school district size can have enormous and permanent effects on school size; for when school districts are consolidated or reorganized, the schools within the district(s) usually get larger.

Background

America has been consolidating its school districts since the early part of this century. In 1931 there were 127,531 school districts in the United States. By 1987 this number had dropped to 15,577 (Snyder 1989, 90). This was no accident. "Between 1939-1980, the local administrative units of American education were transformed from small, informal community arrangements into large professionally run bureaucracies. . . . the growth and formalization of district organizations through consolidation stemmed in large part from the expanding role of state bureaucracies (Strang 1987, 352). The importance of the administrative transformation occurring through district consolidation should not be overstated. Consolidation preserves the formal autonomy of local school districts. At the same time, however, it acts to concentrate local administration in organizations that attend to state and national policy much more than those they replace (p. 364)."

As school districts are consolidated or reorganized, small schools are consolidated or are merged with larger schools. Public education has become bureaucratized and centralized; and although the pace of consolidation has slowed, there is strong support for the principle. There are many special interest arguments for large school districts. They have more total resources. Curricula can be standardized. Students may perform better on achievement tests. Administrators may command larger salaries and larger professional staffs. Teachers may receive better pay and improved fringe benefits. Members of large school boards may exercise a greater power base in matters of educational policy and financial management. Large districts can gain economies of scale in busing and purchasing power, and they can attract more grant money. Strong arguments are made for the capacity of large school districts to provide cost-effective and better quality education.

Recent Examples

School consolidation proposals can generate considerable local interest and debate. For example, at issue at this time is a proposal to build a new high school and consolidate three existing high schools in Abbeville County, South Carolina. The Citizens for Consolidation Group is in the process of getting the facts before the voters for a pending referendum to approve financing for the school's construction. Some parents favoring consolidation have expressed "disappointment over the scarcity of advanced placement courses in the county's school system." Meanwhile, a spokesman for the Concerned Citizens for Better Schools, an anticonsolidation group, has proposed that the county start a preschool program for three- and four-year olds, declaring that the "greater goal would be to attain the most

number of graduates from high school and not such things as advanced-placement courses" (Maxwell 1990, 3A).

Interestingly, only 50 miles away in Greenville County, a school board trustee "asked area lawmakers to consider breaking apart the school district to better meet the needs of students." The vice chairman of the school board said "the board has never seen a plan to split the district that would improve upon the current system. . . . Bigger isn't always better, but I think we run a pretty efficient operation as one district." A state representative noted that "a school district could become so large that it costs more to operate as one unit than if it were divided" (Burns and Gerber 1990, 1A, 8A).

Research Findings

In 1977, Sher and Tompkins took a critical look at rural school consolidation:

> The most successfully implemented policy of the past fifty years has been the consolidation of rural schools and school districts (p. 4).
>
> The impetus to consolidate rural schools almost always came from outside the rural community. It was rare to find a local group that had sponsored or spearheaded the drive for reorganization (p. 4).
>
> The values of smallness—local control, the close relations possible among professionals, parents, students, and community, and the opportunity for many students to participate in school activities at a more meaningful level—were discussed but seemed overshadowed by the promise of new buildings, more courses, and sophisticated equipment. All in all, the benefits of consolidation seemed overwhelming and the costs minimal by comparison (p. 5).
>
> The conclusions are, at best, inconclusive, and at worst, simply incorrect. In short, there is no strong empirical base to support the assumptions and assertions of school and district consolidation advocates (p. 4).
>
> Supposedly there are both economies of scale and greater efficiencies through improved management in larger schools. . . . However the primary problem with the research in this area is that it consistently fails to acknowledge the presence of offsetting diseconomies of scale; i.e., new and enlarged costs attributable to increased size of operations. . . . For example, the bulk of relevant research ignores the additional capital expenditures, salaries, operating costs associated with greatly increased transportation required by consolidation. Children who formerly walked to school must now be bused. Children who used to ride four or five miles per day now must frequently ride twenty or more miles to reach the "centrally-located" school (p. 5).
>
> It is simply incorrect to assert that consolidation is synonymous with economy (p. 7).
>
> Three lessons learned seem important. First, small schools deserve more attention.

> Second, alternatives to consolidation and reorganization should be seriously considered. Third, research done to demonstrate the value of proposed reforms should be scrutinized carefully (p. 14).

In 1984, Monk examined organizational size in relation to the allocation of resources and arrived at the following three conclusions:

> First, size appears to make a difference in terms of how school districts spend their funds. Second, some of the differences involve spending more on one category of student rather than another and may, therefore, violate basic standards of student equity. Third, different aspects of size are related to internal resource allocation practices in different ways.
>
> What is needed is a theory of size in education. . . . As state legislators and district administrators become increasingly interested in understanding their responsibilities regarding the sometimes rapid changes in school district size, it is essential to know more about how the size of a district affects both the opportunities of school children and the costs imposed on taxpayers (pp. 63-64).

In 1985, Butler and Monk analyzed cost differentials between large and small school districts in New York state. They found that

> . . . scale economies enjoyed by large districts can come at the expense of the efficient production of educational outcomes. . . . (and that there was a) possible loss of efficiency associated with efforts to increase size by closing schools and consolidating school districts (p. 361).
>
> There are several reasons for believing that ruralness per se contributes to the efficiency of school district operations:
>
> > First, rural communities may be more homogeneous than urban communities. Second, rural communities may be more stable than urban communities, and stability can contribute to school effectiveness. Third, in rural communities there may be fewer other activities to compete with schools. There is some reason to believe that the school is more likely to be the cultural center of a rural than of a suburban community (p. 365).
>
> These results indicate that there is a sense in which small school districts operate with greater efficiency than otherwise similar larger districts (p. 377).

This research raises questions such as to what extent competition among multiple school districts in a county produces economies that may not occur if the county were a single, county unit district. Another question is whether rural areas are becoming less homogeneous as technology and diversification replace the traditional agricultural base. Further, it begs the question as to how the administrator responds to the heterogeneous population of a suburban or urban school district. With

competing demands for gifted, special education, mainstream, college preparation, tech-prep, bilingual and culturally oriented programs, the large school district faces severe challenges of balance in curricular design. The relative cost effectiveness of a broad curriculum designed for heterogeneous student interests versus a uniform curriculum designed for homogeneous student interests is an open research question for those seeking to maximize educational attainment.

A 1985 paper by Thurston and Clauss questions the approach by the state of Illinois to school consolidation (p. 3). It challenges a state study on the relationship of school size to student achievement which found the highest achievement in schools of 494 to 1279 students (p. 4).

> Justification for school district consolidation is made on the basis of either reducing cost or increasing educational quality. Some cost reduction may be realized through certain economies of scale in some consolidations, but it is by no means automatic. . . . The state board of education emphasizes the relationship between school size and student achievement as the primary rationale for encouraging school consolidation. Because of doubts about the methodological soundness of the study, the consolidation movement would be better served by a closer scrutiny of the relationship between school size and school quality (p. 3).

A 1986 review by Woodward of the history of New York state school district reorganization found:

> In spite of increased financial incentives to reorganize and continued discussion of the benefits of reorganization, few districts have chosen to consolidate with others or to be annexed. While the promise of lower taxes and the prospect of improved educational opportunities continue to be compelling reasons for some districts to reorganize, districts are looking closely at the political issues. Districts considering reorganization today want guarantees that they will not lose local control and the opportunity to be directly involved in their children's education (p. 11).

A 1986 paper by Walberg and Fowler on a school district efficiency study in New Jersey concluded that

> . . . consolidation of districts into large units that has been taking place for the past half century may have been a move in the wrong direction. Generally, it appears that the smaller the district, the higher the achievement when the socioeconomic status and per-student expenditures are taken into account. Why? Superintendent and central staff awareness of citizen and parent preferences, the absence of bureaucratic layers and administrative complexity, teacher involvement in decision making, and close home-school relations—these may account for the efficiency of small districts (p. 20).

In a 1986 evaluation of a North Carolina Department of Public Instruction (DPI) plan for school district consolidation, Sher and Schaller reported (p. 9)

1. that the DPI failed to demonstrate that mergers will advocate any compelling state interest;

2. there is no solid foundation for the belief that elimination of school districts will improve education, enhance cost-effectiveness, or promote great equality; and,
3. except for extraordinary circumstances, district reorganization should remain a voluntary decision of local voters and school boards.

Their evaluation concludes (p. 9):

1. complex, far-reaching merger decisions should be made on a case-by-case basis;
2. since good schools/school districts come in all shapes and sizes, educational policies relying on rigid size/organization criteria are likely to have counterproductive effects;
3. since mandatory mergers will not advance any compelling state interest, "back-door" consolidation approaches should be discontinued;
4. alternatives to consolidation can expand educational opportunities and enhance cost-effectiveness; and,
5. issues like mergers usually are a diversion from the greater tasks of finding new ways to positively influence children's lives and increase teacher effectiveness.

In a 1987 study of relationships between school district enrollment and the allocation of resources across subject areas of the curriculum, Monk suggests:

> One possible interpretation of these results is that small district size has greater adverse effects on students who are in some sense unusual. Examples include the handicapped and gifted students . . . but may also include less obvious student categories such as those with unusual interests or those who fail a subject and must repeat the course (1987b, 375).

A 1988 paper by Haller and Monk expresses concern about the effect of the current educational reform movement on the future of small rural schools. They suggest that emphasis on the traditional view will result in a new round of mandated consolidations of small rural schools and districts which runs counter to research on school size and they describe the two themes of the reform movement as follows:

> "Hard" . . . a widespread and deeply entrenched belief that large size is a prerequisite for a cost-effective, diverse, and specialized curriculum. . . . that greater standardization and accountability follow from dividing a state into a small number of similarly organized, relatively large units (p. 471).
>
> "Soft" . . . researchers have concluded that large schools have adverse effects on certain aspects of the education and social development of youth (p. 471).
>
> On the one hand, there is an unmistakable congruence between the long-standing effort to consolidate small rural schools and the "hard" dimensions of the current school improvement effort, with its emphasis on enhanced academic offerings and accountability (p. 479).

> On the other hand, there is no comparable congruence between the consolidation movement and the "soft" side of the modern reform effort, with its emphasis on the social development of youth, keeping schools close to their communities, increased parental involvement, and decentralized decision making (p. 479).
>
> Few current reformers have given much thought to the implications of their recommendations for the issue of school size (p. 481).

A 1988 ERIC Digest paper by Howley commented on the expense of operating rural schools:

> Rural schools have been faulted for inefficiency because, even as their services were viewed as inadequate, their per-pupil expenditures were viewed as too high. A goal of massive consolidations that occurred in this century was to eliminate this alleged rural inefficiency. Today, many rural educators believe that the push for efficiency has gone too far. The emerging view is that rural schools are inherently more expensive to operate than other schools.

A 1989 report by Camp on a South Carolina State Development Board rural education study identified a similar problem:

> The study . . . indicated that the lack of both financial and human resources was at the foundation of all the problems that face rural education (p. 2).
>
> The lack of a tax base means that rural school districts operate with a disproportionate percentage of their operating budget going to salaries and administration, with little left over for innovative programs, expanded course offerings, continuing education, administrative assistance or high tech educational resources (p. 3).
>
> Perhaps the most difficult resource problem to document was the number of competing private schools that drain valuable community support and human resources from the rural public school system (p. 3-4).

A 1990 paper by Tholkes and Sederberg challenges the accuracy of economy of scale estimates as they are applied to school and school district consolidations:

> Since 1960 the long-standing assumption that economies of scale inevitably result from rural school consolidation has been frequently challenged. Useful and important insights into the complexity of economies of scale as they relate to schools and districts have been gained, but at the expense of certainty. The fact that adequate research models for application of the economies of scale principle to school organizations are lacking has not, however, invalidated the concept, or reduced its importance in school reorganization. Consolidation plans continue to be sold to communities on the basis of lower costs or "more education for the tax dollar," both of which are economies of scale arguments. If arguments based on the economies of scale principle are pursued,

it is important that their estimation be accurate, and not mask or reduce consideration of other reasons for restructuring school organizations such as changing population densities, new demands for educational services, or equal access to educational opportunity. Placement of the economies of scale concept in its proper perspective for rural school reorganization would be a worthwhile research achievement, and would enhance the applied knowledge of rural educators (p. 14).

History Revisited

Writing in 1973, Mullins identified most of the arguments for and against school district consolidation that continue to be debated today—seventeen years later. Proconsolidation arguments, according to Mullins, are questions of *dollars and sense* because mergers can provide more economical and efficient operations through (p. 24-26):

Reductions in administrative staff
Fuller utilization of facilities and teachers
Savings through bulk purchases and combined busing costs
Offering a wider range of programs in all areas of instruction at lesser cost
Elimination of confusion created by separate elementary and secondary districts
Providing curriculum continuity for K through 12
Responsiveness to financial equity court battles

Anticonsolidation arguments, according to Mullins, include:

Bigger is not necessarily better
Large districts can become "educational Frankensteins"
Monetary savings can be wiped out by monolithic bureaucracies with their attendant red tape and inefficiency
Two inefficient districts don't necessarily combine into one efficient one
Small classes mean more individual attention to students
Local control will be lost
Domination of an entire district by a more populous or politically powerful portion of it
Generation of feuds between town and country
One school board is not necessarily better than two
Busing problems
Don't rock the boat!

School Size as a Variable

Three Dimensional Dilemma

Sandwiched between the ends of the size spectrum is the question of school size. One may argue that if small classes are the most educationally productive, should it not follow that small schools should be comparably productive? Conversely, if large school districts provide economies of scale and

effective resource management, should not large schools be equally economical and effective?

In the complex equation for organizing and managing an education system, school size tends to be a dependent variable while class size and district size tend to be independent variables. If limits on class size are set and if public policy mandates the consolidation of school districts, then school size becomes a function of the other variables. If school size were treated as an independent variable, targets for optimal school size would be set; and the targets could be attained through the allocation of resources. More often it seems that school size is the unknown factor in the equation, and it becomes simply a result of other factors acting upon it.

Alternatives to Larger Schools and School Districts

Having reviewed current literature on school size and the related problem of school district size, the next logical step is to examine the options and alternatives to making decisions that will support the "bigger is better" concept. That would, however, extend beyond the scope of this working paper which is limited to a review of recent research on school size. Those who are ready to proceed beyond this point may be assured that there is a wealth of research and literature available, much of it already cited in the references of this paper. The reader will find a valuable summary of alternatives with supporting bibliography in Rincones' recent paper on *Exploring Alternatives to Reorganization* (1988). The reader may also wish to review the full text of the recommendations of Monk and Haller's *Organizational Alternatives for Small Rural Schools* study (1986, 99-120).

Concluding Observations

This review of recent research on school size indicates the following:

1. Small schools can be highly effective in providing quality education.
2. Large schools may not provide the economies of scale nor the quality of education claimed in justifying their largeness.
3. School size tends to be a dependent variable in the educational equation, and as such, it becomes a result of the influence of independent variables such as class size and district size.
4. School district size is the most significant factor in determining school size, and consolidation and reorganization plans generally result in larger schools.
5. School size is an issue of particular concern in rural areas where small schools are prevalent and where proposals for consolidation should be weighed in the context of research findings on the relative effectiveness of small versus large schools.

Monk and Haller, who have written extensively on the merits of small schools, provide a sense of objectivity and reality in the final comments of their extensive 1986 study of New York state schools.

> In contrast to the traditional emphasis on "bigger is better," we stress the importance of balance and flexibility. This new stance is in keeping with much of the current thinking about educational reform. The idea that there is a single optimal school or

school district size is a myth (1986, 120).

This sage observation may serve as basic guidance for educators, administrators, community leaders, and parents faced with the dilemma of making critical decisions affecting school size, district consolidation, and quality education. In the final analysis, the optimal size for a given school or school district will be that which responds most effectively to the educational goals, parental concerns, and available resources of the community.

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